PROCESS TO MAKE DECISION ON WHEN TO ALTER UPSTREAM BURST PROFILE BASED UPON PACKET LOSS PERCENTAGE USING HYSTERESIS THRESHOLDS

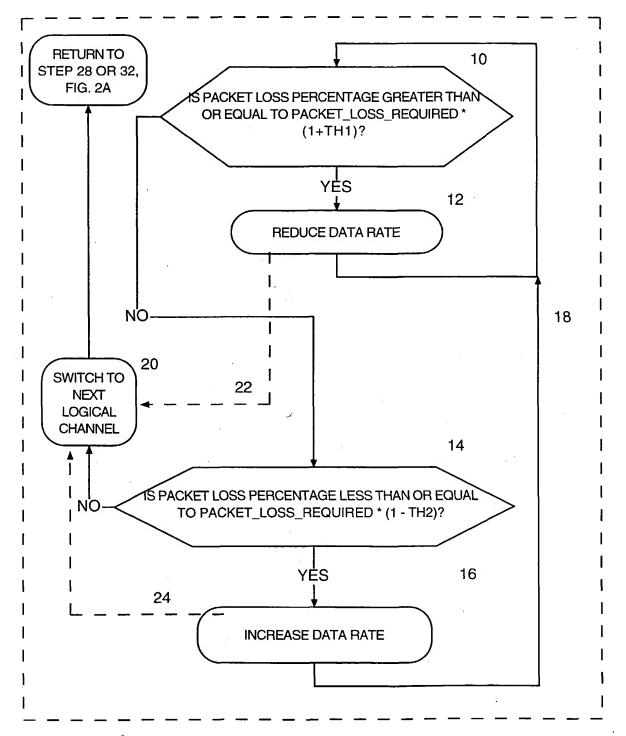
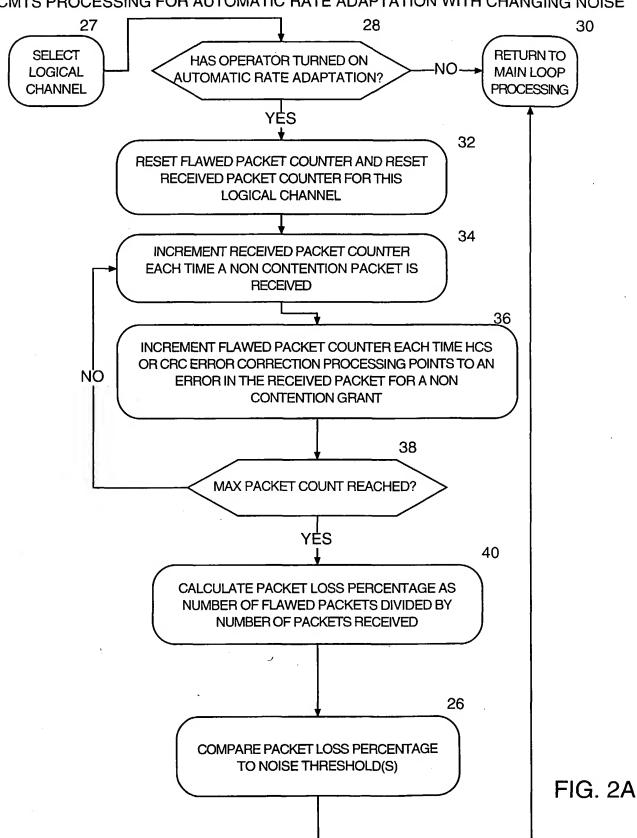


FIG. 1

CMTS PROCESSING FOR AUTOMATIC RATE ADAPTATION WITH CHANGING NOISE



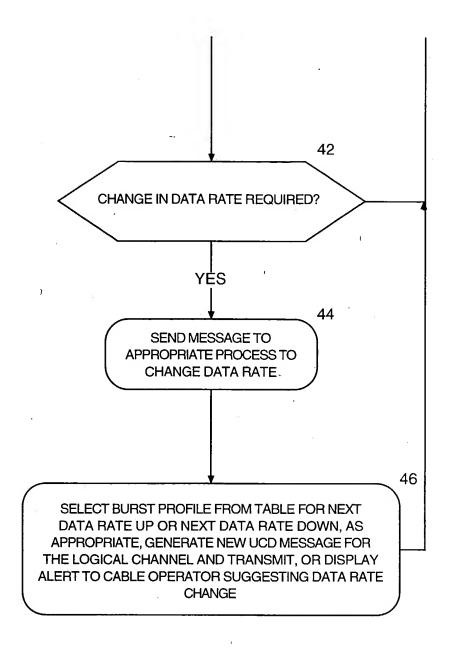
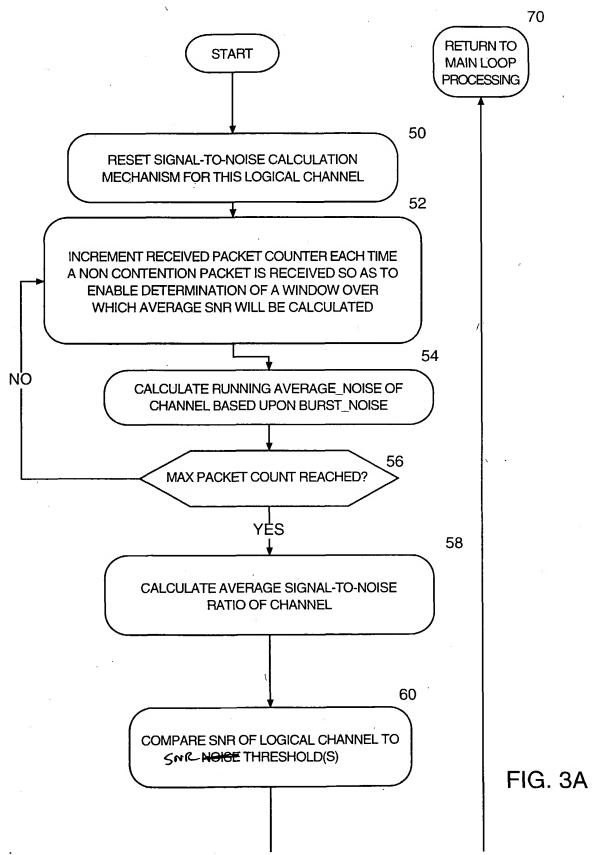


FIG. 2B

CMTS PROCESSING FOR AUTOMATIC RATE ADAPTATION WITH CHANGING NOISE



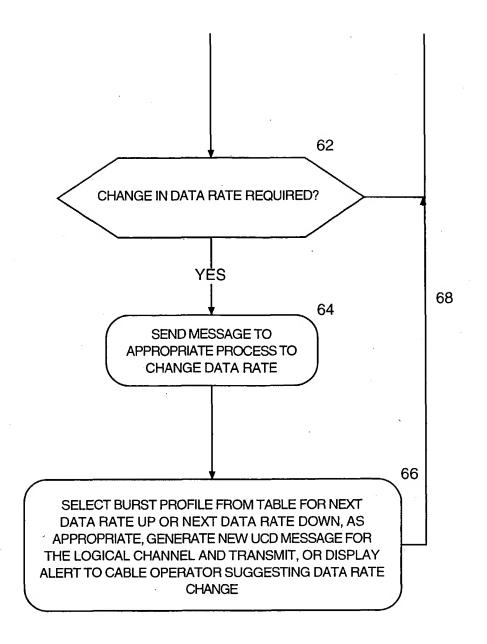
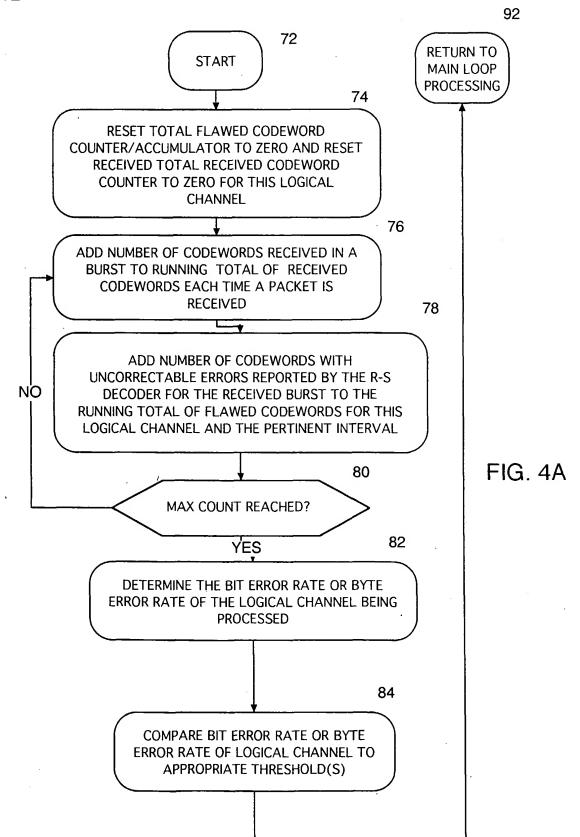


FIG. 3B



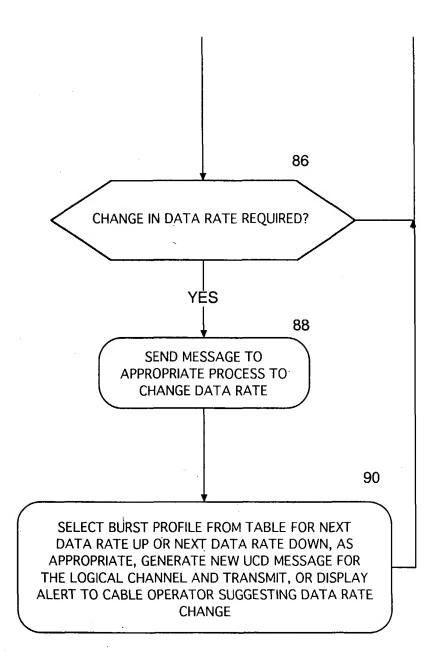


FIG. 4B

GENERIC PROCESS TO AUTOMATICALLY DETECT THE NEED TO ADAPT BIT RATE TO NOISE CONDITIONS ON A LOGICAL CHANNEL AND AUTOMATICALLY CHANGE **BIT RATE** 82 **POWERUP** DETERMINE TYPE OF PREVALENT NOISE CONDITIONS ON THE LOGICAL CHANNEL BEING PROCESSED AND SELECT THE APPROPRIATE TABLE OF BURST PROFILES BASED UPON CHANNEL'S PREVALENT NOISE CONDITIONS. CAICULATE THE SNR OF THE CHANNEL. SELECT AN INITIAL BURST PROFILE 86 98 FROM THE APPROPRIATE TABLE OF **BURST PROFILES OPTIONALLY: SELECT** 88 **ANOTHER** LOGICAL CALCULATE OR DETERMINE A QUALITY OF **CHANNEL IF** CHANNEL PARAMETER SUCH AS PACKET LOSS THERE IS PERCENTAGE OR SIGNAL-TO-NOISE RATIO, OR ONE BIT ERROR RATE OR BYTE ERROR RATE 90 COMPARE QUALITY OF CHANNEL PARAMETER TO THRESHOLD(S) 96 92 **RETURN TO** BIT RATE CHANGE RECOMMENDED? OTHER **PROCESSING** YĖS 94 CHANGE BIT RATE AND GENERATE AND SEND **NEW UCD MESSAGE**

FIG. 5

GENERIC PROCESS TO AUTOMATICALLY DETECT THE NEED TO ADAPT BIT RATE TO NOISE CONDITIONS ON A LOGICAL CHANNEL AND GENERATE MESSAGE

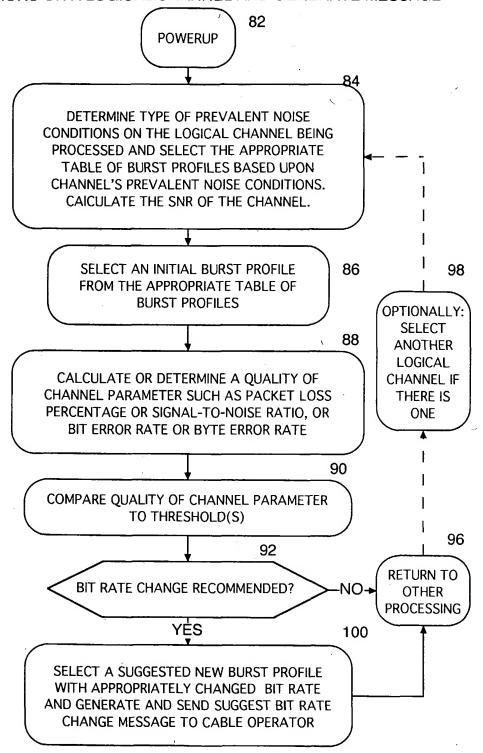
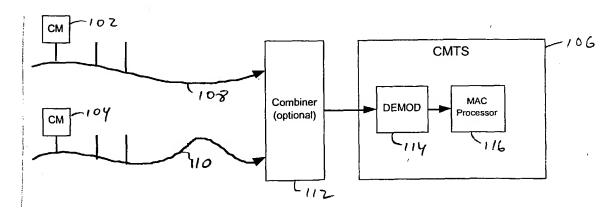


FIG. 6

Example f burst profiles of data for different AWGN SNR for DOCSIS 1.x

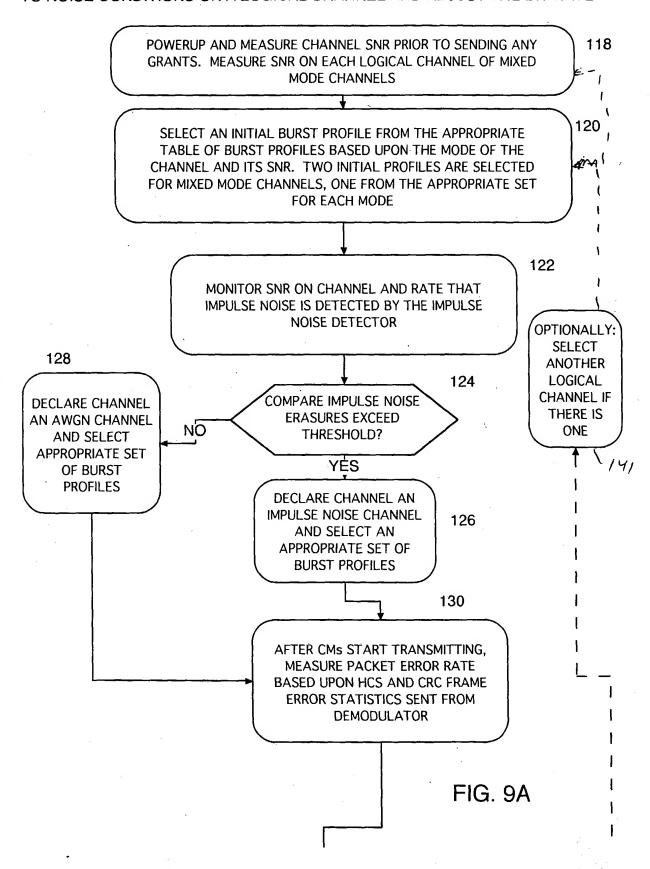
#	Use for Impulse Noise Channel Yes/No	% Bit Rate From Max	Net Data Rate @ 2.56 Msps	Modulation	RS	,
1	у	22%	2.3 Mbps	QPSK	k=16, t=10	
2	у	29%	3.0 Mbps	QPSK	k=28, t=10	
 		 	3.8 Mbps	Qrsk	k=58, t=10	
. 3	у	39%	4.0 Mbps	QPSK	k=78, t=10	
4	n	46%	4.7 Mbps	QPSK	k=235, t=10	
5	у	50%	5.1 Mbps	16-QAM	k=20, t=10	
 -			6.0 Mbps	16-QAM	k=28, t=10	
6	у	62%	6.4 Mbps	16-QAM	k=39, t=10	
			7.5-Mbps	16-QAM	k=55, t=10	
7	. y	79%	8.1 Mbps	16-QAM	k=78, t=10	
8	у	92%	9.4 Mbps	16-QAM	k=235, t=10	·
9	n	100%	10.24 Mbps	16-QAM	k=16, t=0	

FIG. 7



F16.8

GENERIC PROCESS TO AUTOMATICALLY DETECT THE NEED TO ADAPT BIT RATE TO NOISE CONDITIONS ON A LOGICAL CHANNEL AND ADJUST THE BIT RATE



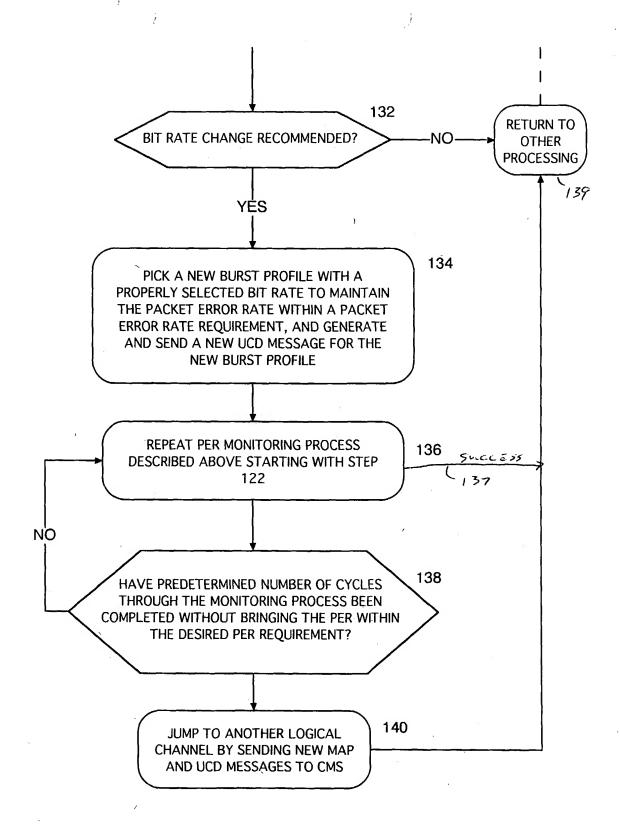


FIG. 9B